

WHAT IS CLAIMED IS:

1. An adapter within a handpiece system including a supply conduit and a medical instrument
5 having an electrical operating element thereon wherein electrical power is transmitted from said supply conduit through said adapter to said medical instrument, said adapter being selectively switchable to match the polarity of electrical power transmitted from the supply conduit to that needed by the operating element.

2. The adapter of claim 1 which comprises first and second electrical power transmission leads
10 and the operating element has first and second contacts to which said leads may be detachably connected in a first orientation with said first lead connected to said first contact and said second lead connected to said second contact, and said adapter is configured for rotation about an axis thereof relative to said contacts to a second orientation whereby said first lead is connected to said second contact and said second lead is connected to said first contact to reverse the polarity of electrical power transmitted to the operating element.

3. The adapter of claim 2, wherein said operating element comprises a light source requiring
15 electrical power to be supplied thereto in a selected polarity and said adapter is configured for detachment from said contacts and when detached may be rotated between at least two predetermined positions and reconnected to said contacts to permit selection of the polarity of electrical power transmitted from said supply conduit to said light source.

4. The adapter of claim 3, wherein said two predetermined positions are disposed at 180
degrees relative to each other.

5. The adapter of claim 2, wherein one end of a lead comprises a slide contact.

6. The adapter of claim 2, wherein said leads and contacts are connected by non-rotatable plug
contacts.

7. The adapter of claim 1, which further comprises lines for the transmission of fluids or drive
30 energy.

8. The adapter of claim 1 which comprises a pair of substantially fixed connectors electrically
isolated from each other, said pair of connectors comprising a first connector which may be connected to a first power transmission line in said supply conduit and a second connector which may be connected to a
35 second power transmission line in said supply conduit, a pair of substantially fixed leads electrically isolated from each other, said pair of leads comprising a first lead which may be connected to a first contact of the operating element and a second lead which may be connected to a second contact of the operating element,

and a switchable connection between said connectors and said leads which when in one switched condition provides an electrical current path from said first connector to said first lead and from said second connector to said second lead, and in a second switched condition provides an electrical current path from said first
5 connector to said second lead and from said second connector to said first lead.

9. The adapter of claim 8, wherein said switchable connection comprises portions of said first and second leads which are movable between different circuit routings to reverse the polarity of electrical power transmitted from said supply conduit to said operating element.

10. The adapter of claim 8, wherein said switchable connection comprises a switch.

11. The adapter of claim 1, wherein said leads each are divided into sections in which there are rigid sections and movable sections, and whereby different lead routing results through the connection of the
15 movable sections to the rigid sections.

12. The adapter of claim 11, which further comprises a switch for making a selected connection between movable sections and rigid sections.

13. Light emitting apparatus including a light source requiring a selected polarity of power supply connected to a supply conduit through which electrical power is transmitted and an adapter connected between the light source and the supply conduit, said adapter being selectively switchable to match the polarity of electrical power transmitted from the supply conduit to that required by the light source.

14. The apparatus of claim 13 wherein said adapter comprises first and second electrical power transmission leads and the light source is connected to first and second contacts to which said leads may be detachably connected in a first orientation with said first lead connected to said first contact and said second lead connected to said second contact, and said adapter is configured for rotation about an axis thereof relative to said contacts whereby said first lead is connected to said second contact and said second lead is
30 connected to said first contact to reverse the polarity of electrical power transmitted to the operating element.

15. The apparatus of claim 14, wherein said adapter is configured for detachment from said contacts and when detached may be rotated between at least two predetermined positions and reconnected to said contacts to permit selection of the polarity of electrical power transmitted from said supply conduit to
35 said light source.

16. The apparatus of claim 15, wherein said two predetermined positions are disposed at 180 degrees relative to each other.

17. The apparatus of claim 15, which further comprises a light conductor positioned to conduct light from said light source to a selected treatment site.

18. The apparatus of claim 14, wherein one end of a lead of said adapter comprises a slide contact.

19. The apparatus of claim 14, wherein said leads and contacts are connected by non-rotatable plug contacts.

20. The apparatus of claim 13 wherein said adapter comprises a pair of substantially fixed connectors electrically isolated from each other, said pair of connectors comprising a first connector which may be connected to a first power transmission line in said supply conduit and a second connector which may be connected to a second power transmission line in said supply conduit, a pair of substantially fixed leads electrically isolated from each other, said pair of leads comprising a first lead which may be connected to a first contact of the light source and a second lead which may be connected to a second contact of the light source, and a switchable connection between said connectors and said leads which when in one switched condition provides an electrical current path from said first connector to said first lead and from said second connector to said second lead, and in a second switched condition provides an electrical current path from said first connector to said second lead and from said second connector to said first lead.

21. The apparatus of claim 20, wherein said switchable connection comprises portions of said first and second leads which are movable between different circuit routings to reverse the polarity of electrical power transmitted from said supply conduit to said operating element.

22. The apparatus of claim 20, wherein said switchable connection comprises a switch.

23. The apparatus of claim 13, wherein said leads each are divided into sections in which there are rigid sections and movable sections, and whereby different lead routing results through the selected connection of the movable sections to the rigid sections.

24. The apparatus of claim 23, which further comprises a switch for making a selected connection between movable sections and rigid sections.

25. A handpiece system comprising
a supply hose having a distal end coupling device with supply contacts for supplying electrical
power transmission from an external power source,
5 a handle sleeve having a light source contained therein with receiving contacts for connecting the
light source to receive electrical power from said coupling device, and
an adapter connected between said coupling device and light source selectively switchable to match
the polarity of electrical power transmitted from the power source to that needed by the light source.

10 26. The handpiece system of claim 25, wherein said adapter comprises first and second
electrical power transmission leads and said receiving contacts comprise first and second contacts to which
said leads may be detachably connected in a first orientation with said first lead connected to said first
contact and said second lead connected to said second contact, and said adapter is configured for rotation
about an axis thereof relative to said contacts to a second orientation whereby said first lead is connected to
15 said second contact and said second lead is connected to said first contact to reverse the polarity of electrical
power transmitted to the operating element.

27. The handpiece system of claim 25, wherein said adapter is configured for detachment from
said receiving contacts and when detached may be rotated between at least two predetermined positions and
20 reconnected to said receiving contacts to permit selection of the polarity of electrical power transmitted from
said supply hose to said light source.

28. The handpiece system of claim 25, wherein said adapter comprises a pair of substantially
fixed connectors electrically isolated from each other, said pair of connectors comprising a first connector
25 which may be connected to a first power transmission line in said supply hose and a second connector which
may be connected to a second power transmission line in said supply hose, a pair of substantially fixed leads
electrically isolated from each other, said pair of leads comprising a first lead which may be connected to a
first receiving contact of the light source and a second lead which may be connected to a second receiving
contact of the light source, and a switchable connection between said connectors and said leads which when
30 in one switched condition provides an electrical current path from said first connector to said first lead and
from said second connector to said second lead, and in a second switched condition provides an electrical
current path from said first connector to said second lead and from said second connector to said first lead.

29. The handpiece system of claim 28, wherein said switchable connection comprises portions of
35 said first and second leads which are movable between different circuit routings to reverse the polarity of
electrical power transmitted from said supply hose to said light source.

30. A process for matching the polarity of contacts within a handpiece system comprising at least two separable parts a first of which is adapted to supply electrical power of one polarity and the second of which is adapted to receive electrical power and requires power of a selected polarity to be operable,
- 5 comprising the steps of
- disconnecting the two separable parts,
- inserting and electrically connecting an adapter between said parts in an arbitrary initial position in an interface between said parts with the two parts joined together with the adapter,
- attempting to operate the second part with an electrical connection provided between said parts
- 10 through said adapter in said initial position,
- and if operation of the second part does not occur moving the adapter into a second position different from said initial position to reverse the polarity of power supplied to said second part from the polarity provided with the adapter in said initial position.